CLAIMS

1. A method of making a thermally-protective coating for a thruster structure, the method being characterized in that it consists in:

· continuously measuring out and mixing (14) at least one polyurethane and a mixture of polymerization agents in which specific fillers have previously been dispersed;

· coating a rotating cylindrical support surface (2) by continuously casting a strip (18) of touching turns of the resulting mixture; and

· pre-polymerizing the resulting coating at ambient pressure so that said polyurethane becomes polymerized sufficiently to be capable of being stressed mechanically.

2. A method according to claim 1, characterized in that said polyurethane has isocyanate terminal groups, said polymerization agents are amines and/or polyols, and said specific fillers are in powder or fiber form.

3. A method according to claim 2, characterized in that said polyurethane is the result of reacting a polyether with diphenyl-methane-diisocyanate.

4. A method according to any one of claims 1 to 3, characterized in that the continuous casting of said strip (18) of mixture is adjusted so as to obtain both a coating of varying thickness over the entire surface of the support.

5. A method according to any one of claims 1 to 4, characterized in that the measuring out of said polyurethane and of said mixture of polymerization agents and fillers varies in such a manner as to obtain both a first mixture and at least one second mixture different from the first.

6. A method according to claim 5, characterized in that said coating of the surface of the support is obtained by means of a first casting of a strip (18) of said first mixture, and by means of at least one second casting, superposed on the first, of a strip of said second mixture.

7. A method according to any one of claims 1 to 6, characterized in that the step consisting in pre-polymerizing said coating at ambient pressure, also takes place at ambient temperature.

8. A method according to any one of claims 1 to 7, characterized in that it further comprises a step of machining said pre-polymerized coating to have a desired outside profile.

9. A method according to any one of claims 1 to 8, characterized in that it further comprises a step of polymerizing said pre-polymerized coating.

10. A method of making a thruster structure comprising a casing fitted with an internal thermally-protective coating and/or an external thermally-protective coating, the method being characterized in that said thermally-protective coating is made in accordance with any one of claims 1 to 8.

11. A method according to claim 10, characterized in that the internal thermally-protective coating is made on an outside surface of a mandrel (2), said casing of the thruster being deposited and bonded on an outside surface of said thermally-protective coating.

12. A method according to claim 10, characterized in that an internal thermally-protective coating is deposited and bonded on an inside surface of said casing after the casing has been obtained.

13. A method according to any one of claims 10 to 12, characterized in that an external thermally-protective coating is deposited and bonded on an outside surface of said casing.

14. A method according to any one of claims 11 to 13, characterized in that the bonding between said casing and the thermally-protective coating(s) is implemented with the help of a bonding agent.

15. A method according to any one of claims 11 to 13, characterized in that the bonding between said casing and said thermally-protective coating is implemented with the help of a film of adhesive polyurethane obtained by continuously casting a strip of touching turns.

16. A method according to any one of claims 10 to 15, characterized in that said casing of the thruster is made of metal.

17. A method according to any one of claims 10 to 15, characterized in that said casing of the thruster is obtained by winding a filament of pre-impregnated fiber material.

18. A method according to claim 17, characterized in that the thermally-protective coating(s) and said filament winding are polymerized simultaneously.

19. A solid propellant thruster structure, characterized in that it is made in accordance with any one of claims 10 to 18.